

Important Advances in Clinical Medicine

Epitomes of Progress — Neurosurgery

The Scientific Board of the California Medical Association presents the following inventory of items of progress in neurosurgery. Each item, in the judgment of a panel of knowledgeable physicians, has recently become reasonably firmly established, both as to scientific fact and important clinical significance. The items are presented in simple epitome and an authoritative reference, both to the item itself and to the subject as a whole, is generally given for those who may be unfamiliar with a particular item. The purpose is to assist the busy practitioner, student, research worker or scholar to stay abreast of these items of progress in neurosurgery which have recently achieved a substantial degree of authoritative acceptance, whether in his own field of special interest or another.

The items of progress listed below were selected by the Advisory Panel to the Section on Neurosurgery of the California Medical Association and the summaries were prepared under its direction.

Reprint requests to: Division of Scientific and Educational Activities,
California Medical Association, 731 Market St., San Francisco, CA 94103

Neurosurgical Treatment of Stroke

ADEQUATE TREATMENT of stroke depends on several factors: (1) early presumptive diagnosis of vascular insufficiency of the brain which precedes irreversible brain infarction (that is, a diagnosis of transient ischemic attack [TIA] or reversible ischemic neurological deficit [RIND]), (2) complete workup including cerebral angiography to show vascular stenotic or occlusive lesions that correlate with neurological symptoms and signs and (3) prompt and appropriate neurosurgical or medical treatment before irreversible significant brain infarction has occurred.

Early presumptive diagnosis of TIA or RIND reflects a careful history. Abrupt, possibly repetitive neurologic dysfunction has occurred followed by recovery which is usually prompt and complete. These episodes are most common in patients 50 to 60 years old who have arteriosclerosis. Hypertension may or may not be present. Orthostatic hypotension frequently is present. The neurologic defect will suggest the vessel involved. As an example, blurring of vision in the left eye with right-sided weakness and difficult speech with moderate confusion suggest left internal carotid artery insufficiency. Left hemianopic vision loss and left-sided weakness might imply posterior right hemisphere circulation deficit; that is, the

right posterior cerebral artery. In the usual case, no headache is associated and syncope rarely is present. Duration of the deficit may be minutes to several hours. Recovery usually is complete. A presumptive diagnosis should be considered promptly when this type of history is present.

The neurological examination should give findings supporting the history. Such an examination may show bruits in the neck, vague paresis, subtle sensory changes, retinal arteriosclerosis, or the like. However, a neurological examination showing no abnormalities is common. A patient with persisting major neurological deficits is no longer in the reversible phase of cerebral vascular insufficiency. At least a small stroke is present. Prediction of exact reversibility is not reliable on the first examination. Frequently orthostatic hypotension can be shown to exist, usually transient when the patient stands up from a sitting or reclining position.

The complete workup is best done in the hospital once a presumptive diagnosis of reversible vascular insufficiency has been made. General, physical and neurological evaluation needs support by computed tomographic scan which distinguishes among infarction, hemorrhage, and no infarction—and on occasion may even show tumor. Complete cerebral angiography is mandatory